

# **Surface Movement Guidance and Control System (SMGCS) Plan.**

**Bakersfield Meadows Field Airport (BFL)**

**Effective November 29, 2000**



U.S. Department of Transportation  
**Federal Aviation Administration**



U.S. Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
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NOV 29 2000

Mr. Frank K. Day  
Manager of Operations  
Department of Airports  
Meadows Field  
1401 Skyway Drive, Suite 200  
Bakersfield, CA 93308-1397

Dear Mr. Day:

**Subject: Surface Movement Guidance and Control System (SMGCS)**

Your proposed Low Visibility Taxi Route Chart (November 17, 2000), has been reviewed and is approved for inclusion in the Meadows Field SMGCS Plan.

SMGCS Operations utilizing the Meadows Field Surface Movement Guidance and Control System is approved.

Questions or comments may be directed to Inspector Roland J. McKee at (310) 725-7240.

Sincerely,

*for Larry S. Kephart*  
David C. Gillion  
Manager, Flight Standards Division

## **1. INTRODUCTION**

**1.1 Surface Movement Guidance and Control System (SMGCS) Plan.** This Surface Movement Guidance and Control System (SMGCS) Plan describes airport enhancements made to Meadows Field (BFL) Airport, and it contains procedures and actions applicable to the airport operator, air traffic control, air carriers, and other tenants of the airport. These enhancements, procedures, and actions are in accordance with the guidance in the Federal Aviation Administration (FAA) Advisory Circular 120-57A, Surface Movement Guidance and Control System, and are necessary for FAA approval of takeoff and landing operations by air carriers in visibility conditions below 1200 feet runway visual range (RVR). When visibility conditions are less than 3 statute miles down to and including 1200 feet RVR, operations are conducted on a routine Category I basis. If the air traffic control tower (ATCT) personnel determine that visibility below 1200 feet RVR is probable, they will initiate less than 1200 feet RVR procedures. Operations by air carrier aircraft below 600 feet RVR are not authorized. Operations below 1200 feet RVR while the Air Traffic Control Tower is closed are not authorized.

**1.2 Procedures.** The procedures and actions contained in the SMGCS plan were developed by the SMGCS working group which consists of representatives of the FAA, Airport Operations/Security, Kern County Fire Department, airlines, FBO's, aircraft charter services, cargo aircraft operators, tenant corporate and private aircraft operators. This document does not supersede established policies, procedures, rules or guidelines for airports, operators, or air traffic.

**1.3 Current and Future Enhancements.** This plan addresses both current and future enhancements of the airport regarding low visibility takeoff, landing, and taxiing operations. The work of the SMGCS working group will continue after the initial approval by the FAA. It will meet periodically to assess current low visibility operations, and it will develop enhancements and modify procedures as experience is gained and the number of low visibility operations increases.

## 2. **DEFINITIONS**

2.1 **Terms.** The following definitions of terms are included:

**a. Apron (Ramp).** The term "apron" comprises the area and facilities used for aircraft gate parking and aircraft support and servicing operations. It includes the following subcomponents:

(1) **Aircraft Parking Positions.** Used for parking aircraft to enplane and deplane passengers, load or unload cargo.

(2) **Aircraft Service Areas.** On or adjacent to an aircraft parking position. They are used by airline personnel/equipment for servicing aircraft and staging of baggage, freight, and mail for loading and unloading of aircraft.

(3) **Taxilanes.** Reserved to provide taxiing aircraft with access to and from parking positions.

(4) **Service/Fire Lanes.** Identified rights-of-way on the apron designated for aircraft ground service vehicles and fire equipment.

**b. Hold Point.** The term "hold point" refers to a location where the air traffic controller could be expected to hold a taxiing aircraft.

**c. Low Visibility Operations.** For the purpose of this plan, low visibility operations are considered to mean the movement of aircraft on the airport when the visibility conditions are reported to be between 1,200 feet RVR and 600 feet RVR.

**d. Movement Area.** The term "movement area" refers to the runways, taxiways, and other areas of the airport, which are utilized for taxiing, takeoff, and landing of aircraft; and are exclusive of aprons and aircraft parking areas. Specific approval from the ATCT must be obtained prior to entering the movement area. See figure 1 for movement/nonmovement area boundaries.

**e. Nonmovement Area.** The term "nonmovement area" refers to taxiways and apron areas not under the control of air traffic control (ATC).

**f. Surface Movement Guidance and Control System (SMGCS).** This system consists of the provisions for guidance to, and control or regulation of all pilots, ground vehicle operators, and personnel of any airport during low visibility operations. Guidance relates to facilities and information necessary for pilots and ground vehicle operators to find their way about the airport. Control or regulation relates to the measures necessary to prevent collisions and ensure smooth and efficient traffic flows.

**g. Taxi Route.** The term "taxi route" refers to a specific sequence of taxiways or taxiway segments used by aircraft during low visibility operations when taxiing between the runway and the apron.

**h. Airport Operations/Security.** The airport operator's staff, from the operations and security sections.

**i. Hold Bar.** The standard runway hold position marking on taxiways intersecting a runway. At Meadows Field, taxiway hold bars are generally 255 feet from the centerline of Runway 12L/30R.

**j. Ground Marshall.** Airline ground personnel providing visual hand signals to guide an aircraft from the airline parking apron to Taxiway Exit A-3.

**k. Clear Route.** A sterile route without any other traffic.

**l. Follow-Me-Vehicle.** A vehicle that escorts an aircraft and is identified by flashing yellow emergency lights.

**m. Primary Route.** The Primary route is a clear route of access from the apron exit point A-3 Southeast to the run-up area for Runway 30R. Advise the aircraft to hold at the run-up area and to contact Bakersfield Tower when ready to continue taxiing to the departure point at the threshold of Runway 30R. The Follow-Me-Vehicle is authorized on Runway 30R and shall escort the aircraft down the centerline of Runway 30R to the departure point.

**n. Alternate Route.** The Alternate Route is a clear route from the apron exit point A-3 in a Northwesterly direction on Taxiway "A" to the hold bar at Taxiway "E" or "F" intersection at the threshold of Runway 30R. The Follow-Me-Vehicle is authorized on to Runway 30R, when cleared.

**o. Departure Point.** The threshold of Runway 30R (at the intersection of Runway 30R and Taxiway "E").

### **3. FACILITIES AND EQUIPMENT**

The following supports the low visibility operations (see low visibility charts):

**3.1 Runway.** Only runway 30R is to be used for takeoff and landing operations when the reported visibility is reduced down to 1200 feet RVR. Runway 30R is served by a Category I instrument landing system (ILS); touchdown, midpoint, and rollout RVR equipment; approach lighting system with sequence flashers (MALSS); touchdown zone lighting; centerline lighting; high intensity edge lighting; and it is appropriately marked for instrument operations.

**3.2 Movement Area Boundary Lighting and Signing.** Taxi hold position lights markings and signs are installed at all entrances to runway 30R. Runway and taxiway markings are retroreflective to increase visibility during night and low visibility operations. Lighted signs are illuminated when the prevailing visibility is below 3 statute miles during daylight hours (sunrise to sunset) and at night (sunset to tower closing).

**3.3 Taxiway Guidance Signing and Marking.** Taxiway guidance signing and marking are legible and not obscured. The illumination of all lighted signs along the taxi routes is functional.

**3.4 Communications.** Telephone and radio communications are functional between all organizations involved in the execution of this plan (for example, telephone and radio communication between aircraft rescue and firefighting (ARFF) personnel and the ATCT).

**3.5 Notification.** All organizations involved in the execution of this plan are notified when the plan goes into effect.

**3.6 Pilots.** It is the responsibility of the pilot to secure a Follow-Me-Vehicle.

### **4. AIRCRAFT RESCUE AND FIRE FIGHTING**

**4.1 Airport Rescue and Fire Fighting (ARFF).** The primary ARFF facility during low visibility operations will be Fire Station "62" located just west of the end of runway 30L, abeam the landing threshold for runway 30R. The response time is in compliance with FAR Part 139. During low visibility operations, equipment and personnel will remain on alert status at the station.

**4.2 Coordination.** Coordination between ATC and ARFF is accomplished annually to ensure effectiveness of the ARFF services. The coordination is accomplished as part of the "table top" exercise or the disaster drill required by FAR Part 139. Daily coordination is part of the standing operating procedures between the Fire Department, Air Traffic Control Tower, and Airport Operations/Security.

## **5. VEHICLE CONTROL**

**5.1 Access.** Vehicle access to the airport is controlled by a system of perimeter fencing and gates. All airport and tenant vehicles entering the airport are identified by mandatory markings on the side of the vehicle, or decals. Vendors and contractor vehicles are escorted if they are accessing the airline parking ramp. Operations/ Security personnel check both the vehicle and driver for appropriate identification and authorization. Airport Operations/Security personnel patrol all airside areas and are instructed to have unauthorized vehicles removed from the airport.

**5.2 Drivers.** All vehicle drivers are provided training. Airport employees are provided driver training by Airport Operations/Security. A standard, written driver's test developed by Airport Operations/Security is administered to all vehicle drivers and must be passed before the driver is allowed to operate a vehicle on or near the airline ramp. The driver training courses will be reviewed annually by Airport Operations/Security to ensure the training programs are applicable to current low visibility operations. Specific "Dual" instruction will be given all follow-me vehicle drivers prior to their authorization to operate within the duties prescribed by this plan.

**5.3 Authorized Vehicles.** Only vehicles operated by airport operations, airport maintenance, airport security, ARFF Station 62, and FAA facility maintenance personnel are allowed on the airport movement area. In order to gain entry to the movement area, specific approval must be obtained from the ATCT by radio. Any other vehicle must be escorted by an airport operations/security vehicle. When the visibility is below 1200 feet RVR, the ATCT will not allow any vehicle on the movement area that is not in direct support of the SMGCS plan. This will generally include airport operations vehicles used to inspect the airport; airport maintenance vehicles used to maintain lighting; and airport security and ARFF vehicles used to respond to emergencies. All other access will be coordinated and approved by airport operations.

**5.4 Implementation.** Prior to implementation of this plan, airport operations will analyze all construction activity and/or other specialized activity on the airport and determine the limitations to be imposed. These range from restrictions to elimination of the activity.

**5.5 Follow-Me-Vehicle Operations.** The Follow-Me-Vehicle shall not enter Runway 30R without permission from Bakersfield Tower.

**5.6 Vehicle Position Reports.** When Tower requests a position report from the Follow-Me-Vehicle. The vehicle operator shall respond with:

- (a) Clear of Runway 30R at (position) or;
- (b) On Runway 30R at (position).

## **6. AIR TRAFFIC CONTROL PROCEDURES**

**6.1 Background and Operating Concept.** This SMGS Plan provides guidance and control of aircraft between various apron locations and the runways in a safe and efficient manner during low visibility conditions. The coordinated efforts of ATC and Airport Operations are focused on assuring safe movement and avoiding inadvertent or unauthorized entry onto the movement area during low visibility conditions. The concept for accomplishing these objectives is to only use Runway 30R for departures and arrivals when SMGCS is in effect.

- (1). ATC may hold aircraft at any intersection to provide separation from other taxiing aircraft.
- (2). A Follow-Me-Vehicle is required for all aircraft. No aircraft shall be authorized to taxi on any taxiway without a Follow-Me-Vehicle. The Follow-Me-Vehicle shall monitor ATC Frequencies and use their standard radio call identification.
- (3). There shall only be one operation/movement at a time on a sterile/clear route.
- (4). ATC shall only authorize one aircraft at a time to use Runway30R. Anticipated separation shall not be used.
- (5). ATC may hold aircraft at any point. Only one aircraft and a Follow-Me-Vehicle shall be allowed on Taxiway "A" between "A-3" and the intersection of Taxiway "A" and "F".

**6.2 Visibility Reporting.** ATCT shall coordinate with Meadows Field Operations/Security and Station 62 when the lowering visibility trend indicates a need to implement the SMGCS procedures. Approval is required from Kern County Department of Airports prior to the implementation of SMGCS Procedures. Airport Operations /Security will notify the air carriers, FBO's, and on-field maintenance firms by telephone that the SMGCS plan is in effect.

These procedures shall be terminated by ATC when no longer deemed necessary due to prevailing weather conditions. ATC shall notify Meadows Field Operations/Security and Station 62 when SMGCS plan is not longer required. Airport Operations/Security will notify the air carriers, FBO's and on-field maintenance firms by telephone that the SMGCS plan is not longer in effect. The airlines will make appropriate notifications when SMGCS plan has been terminated.

**6.3 Departures.** Each airline or aircraft is responsible for positioning aircraft. This may be accomplished with a follow-me vehicle, Ground Marshall or unassisted taxi, if visibility on the apron permits. When established at the movement area boundary, the aircraft will contact Bakersfield Ground Control for taxi instructions. Ground Control shall advise the Follow-Me-Vehicle to proceed to the aircraft's location and advise when they are ready to proceed. Ground Control shall clear the Follow-Me-Vehicle to proceed as instructed. Ground Control shall provide RVR readings to pilots prior to taxiing on the movement area. When visibility is less than 1,200 feet RVR down to and including 600 feet RVR, all taxiway lighting shall be illuminated.



Bakersfield Ground Control will use pilot position reports to monitor the aircraft's position prior to its entry onto the movement area. Ground Control will provide taxi instructions and traffic advisories appropriate to the route. Taxiway "A" will be operated in opposing directions.

**6.4 Departure Routings.** Aircraft routing for departure will depend on the initial location of the aircraft. When established at the movement area boundary, the pilot will contact Bakersfield Ground Control for taxi instructions. The Follow-Me-Vehicle shall escort the aircraft to the departure point.

(1). **Runway 30R Primary Route.** Aircraft departing from the Air Carrier Apron will proceed west to Taxiway "A-3". The Follow-Me-Vehicle and aircraft must have ATC clearance prior to entering Taxiway "A". They will proceed southeast on Taxiway "A" to Taxiway "B" and hold at the hold bars for Runway 30R. The Follow-Me-Vehicle will contact Bakersfield Tower and advise when ready to proceed on to Runway 30R. After receiving clearance from Bakersfield Tower, they will proceed on to Runway 30R and Northwest to the threshold of Runway 30R. The Follow-Me-Vehicle shall exit Runway 30R and report clear. The centerline lighting will be illuminated unless otherwise requested.

(a). **PHRASEOLOGY:**

(1). **Ground Control:** "Taxi Runway 30R via Taxiway A-3, southeast on Taxiway 'A' to Taxiway 'B', hold short of Runway 30R. Contact Tower 118.1 and advise when ready to proceed to the departure point".

(2). **Local Control:** "Proceed northwest bound and hold at the departure point on Runway 30R".

**NOTE:** Do not clear the aircraft for take-off until the Follow-Me-Vehicle reports clear of runway.

(2). **Runway 30R Alternate Route.** Aircraft departing from other locations may be issued the alternate route. Proceed West to Taxiway "A" and hold at the movement area boundary at one of the exits 1-10. When established at the movement area boundary, the aircraft will contact Ground Control for taxi instructions. The Follow-Me-Vehicle will proceed to the aircraft's location, contact Ground Control, advise position, and request approval to proceed on to Runway 30R. When approved they shall proceed northeast on Taxiway "A" to Taxiway "E" and hold at the hold bar for Runway 30R. The follow me vehicle shall report clear of the aircraft. When the aircraft is ready for departure contact Bakersfield Tower and advise.

(a). **PHRASEOLOGY:**

(1). **Ground Control:** "Proceed to Runway 30R via Taxiway 'A' to the intersection at 'E'. Hold short of Runway 30R, contact tower 118.1 and advise when ready for departure".

(2). **Local Control:** "Runway 30R cleared for takeoff (any instructions)".

(3). Aircraft departing from locations on the west side of the airport shall position themselves at the Runway 12R/30L hold position marking northeast of the Fire Station ramp. Call Ground Control on 121.7 for taxi instructions. The Follow-Me-Vehicle will proceed to the aircraft via the non-movement area. Upon establishing contact with the aircraft, the Follow-Me-Vehicle will contact Ground Control, advise position, and request approval to cross Runway 12R/30L. The Follow-Me-Vehicle and aircraft must have clearance prior to crossing the runway. When cleared, they will proceed across Runway 12R/30L to "E" and hold short of Runway 30R. The Aircraft will then contact Tower on 118.1 when ready for departure.

a. **PHRASEOLOGY:**

(1). **Ground Control:** "Proceed to Runway 30R via 'E'. Hold short of Runway 30R. Contact Tower 118.1 when ready for departure".

(2). **Local Control:** "Runway 30R cleared for take-off (any instructions)".

**6.5 Arrivals.** Landings shall be conducted on Runway 30R. Arriving aircraft shall be provided RVR readings and advised to exit Runway 30R and report when clear of Runway 30R. Bakersfield Tower shall advise arriving aircraft to hold short of Taxiway "A" and contact Bakersfield Ground Control. Aircraft will advise Ground Control of position/intentions. Ground Control shall advise the Follow-Me-Vehicle to proceed to the aircraft's location and advise when they are ready to proceed. Ground Control shall clear the Follow-Me-Vehicle and aircraft to proceed to their destination and report when established on Taxiway "A". The Follow-Me-Vehicle shall advise Ground Control when clear of the movement area.

**6.6 General Operating Instructions,**

- (1) Controllers shall ensure that the Follow-Me-Vehicle is clear of the aircraft and runway prior to clearing an aircraft for takeoff or landing.
- (2) When an aircraft is using Runway 30R to taxi to the departure point, the controller shall not issue a clearance to land to another aircraft. If an aircraft is cleared to land on Runway 30R, the controller shall not taxi an aircraft on Runway 30R.
- (3) Controllers will use pilot position reports to monitor the aircraft's position prior to its entry onto Taxiway "A".
- (4) Ground Control will provide taxi instructions and traffic advisories appropriate to the route.
- (5) Taxiway "A" will be used in the movement area and operated in opposing directions.
- (6) Controllers shall ensure aircraft under escort by the Follow-Me-Vehicle change and acknowledge all frequency changes necessary as the aircraft and FMV proceed onto or off of the runway or taxiway.

## **7. AIRLINE/AIRCRAFT PROCEDURES DURING LOW VISIBILITY CONDITIONS**

**7.1 Low Visibility Routes.** Pilot's conducting low visibility operations at Meadows Field are required to have a copy of the "Low Visibility Taxi Route Chart". Low visibility routes are depicted on the appropriate NOS and Jeppesen Charts

**7.2 Low Visibility Conditions.** During low visibility conditions, arriving and departing aircraft are only permitted on Runway 30R, with departures from intersection "E" only. Arriving aircraft will only be permitted to taxi from the nearest runway intersection with Runway 30R ("G" through "N") and on to taxiway "A". Aircraft are only permitted to taxi in a southeasterly direction on taxiway "A" to A-3 after arrival. For departures aircraft will usually be directed to taxi from Exit A-3 Southeasterly to the run-up area for Runway 30R, then move Northwesterly on the displaced threshold until they are abeam Taxiway "E". Alternately, departing aircraft may be directed to taxi from A-3 Northwesterly on Taxiway "A" to hold at Taxiway "E".

**7.3 Aircraft Operator.** The aircraft operator is responsible for aircraft movement and separation in apron/parking areas.

**7.4 Departing Aircraft.** Departing aircraft will contact Bakersfield Ground Control on frequency 121.7 when established at the movement area boundary. Airport Operations/Security, manning the Follow-Me Vehicle, will establish visual contact with the departing aircraft and monitor ground control frequency. When cleared by the ground controller, the aircraft will be escorted by the Follow-Me-Vehicle from the movement area boundary via assigned route as described in paragraph 6.4.

**7.5 Landing Aircraft.** Aircraft which have just landed will exit runway 30R via the nearest taxiway intersection ("F" through "N"), reports clear of the runway, and hold for the Follow-Me-Vehicle. When cleared by Ground Control, the aircraft will be escorted by the Follow-Me-Vehicle. They shall proceed as cleared via Taxiway "A" to the apron entry point, A-3, for scheduled airlines; or, for others, to the Taxiway "A" exit as requested.

**7.6 Taxiing After Landing.** When an airline aircraft arrives at the point on taxiway "A" where a left turn is made onto the apron, the aircraft will follow company procedure for taxiing to the gate.

**7.7 Helicopters.** Rotary wing aircraft not requiring taxiing are exempt from the requirements of this plan. Operations shall be conducted I.A.W. applicable Federal Aviation Regulations (FAR's).

## **8. RESPONSIBILITIES**

### **8.1 Airport Operator**

- (1) Host meetings of the SMGCS working group.
- (2) Maintain documentation of working group proceedings.
- (3) Coordinate, amend, publish, and distribute the SMGCS plan.
- (4) Monitor adherence to those sections of the plan under the airport operator's control.
- (5) Conduct specific Follow-Me-Vehicle driver training.
- (6) Conduct initial and annual recurrent operational training to all involved agencies.
- (7) Publish "Notice To Airmen (NOTAM)" when SMGCS is in effect.

### **8.2 Air Traffic Control Tower**

- (1) Initiate/terminate this plan as specified in paragraph 6.
- (2) Provide progressive instructions to ARFF responders during an emergency.
- (3) Coordinate with airport Operations/Security personnel to ensure effectiveness of follow-me services.
- (4) Monitor and control aircraft and vehicles in the movement areas.

### **8.3 Airport Tenants**

- (1) Participate in the SMGCS working group.
- (2) Disseminate low visibility procedures to company employees.
- (3) Appropriately train their personnel in low visibility procedures.
- (4) Provide airport charts to all vehicle operators depicting low visibility taxi routes, movement areas, nonmovement areas, and designated apron control areas with appropriate apron control frequencies.
- (5) Provide apron control as assigned in the nonmovement areas.
- (6) Assure adherence to the sections of this plan that are under tenant control and take action to correct any deficiencies.

## **9. PLANS/MILESTONES**

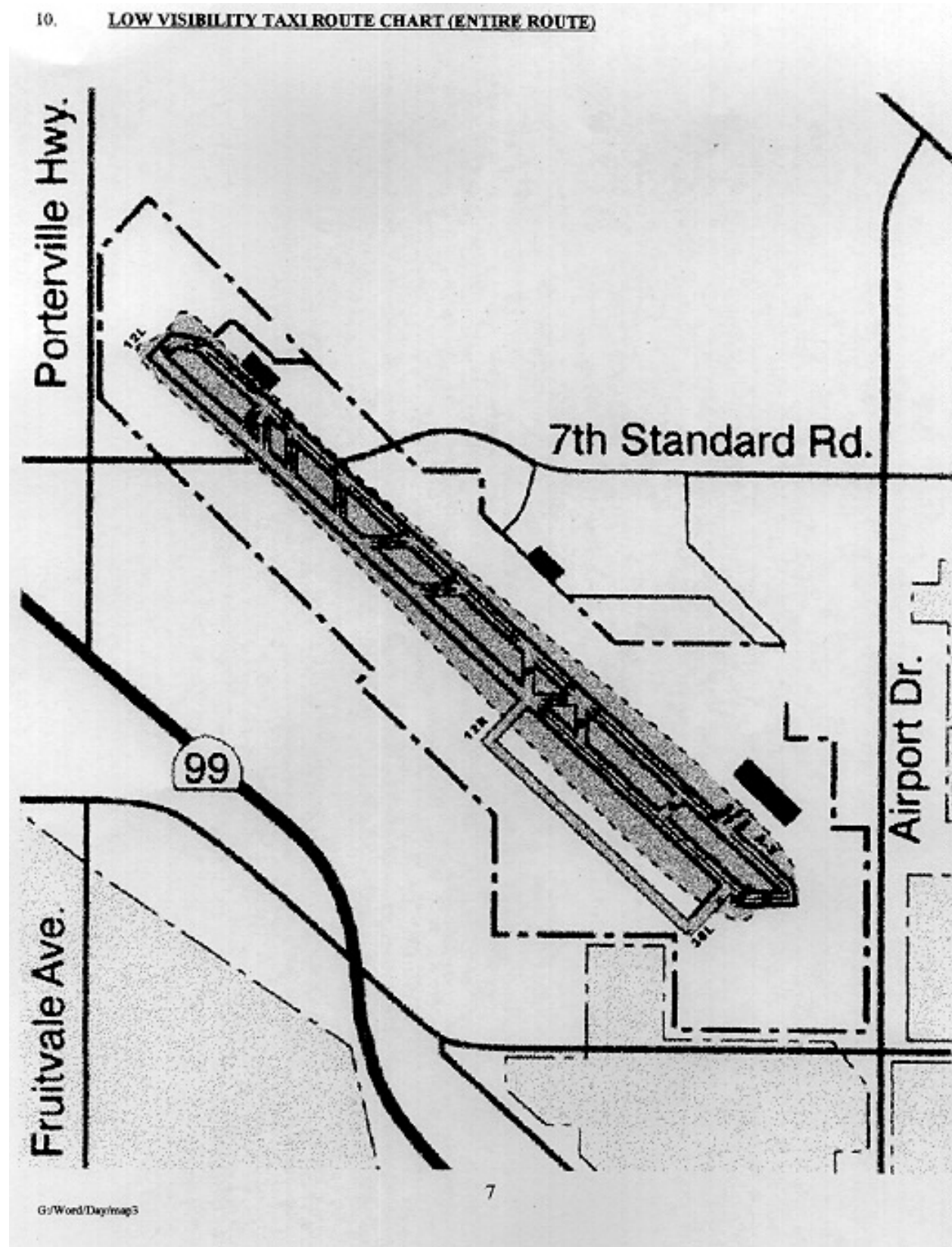
### **9.1 Near Term Plan**

- (1) Upgrade fillets and widen taxiway "E".

### **9.2 Long Term Plan**

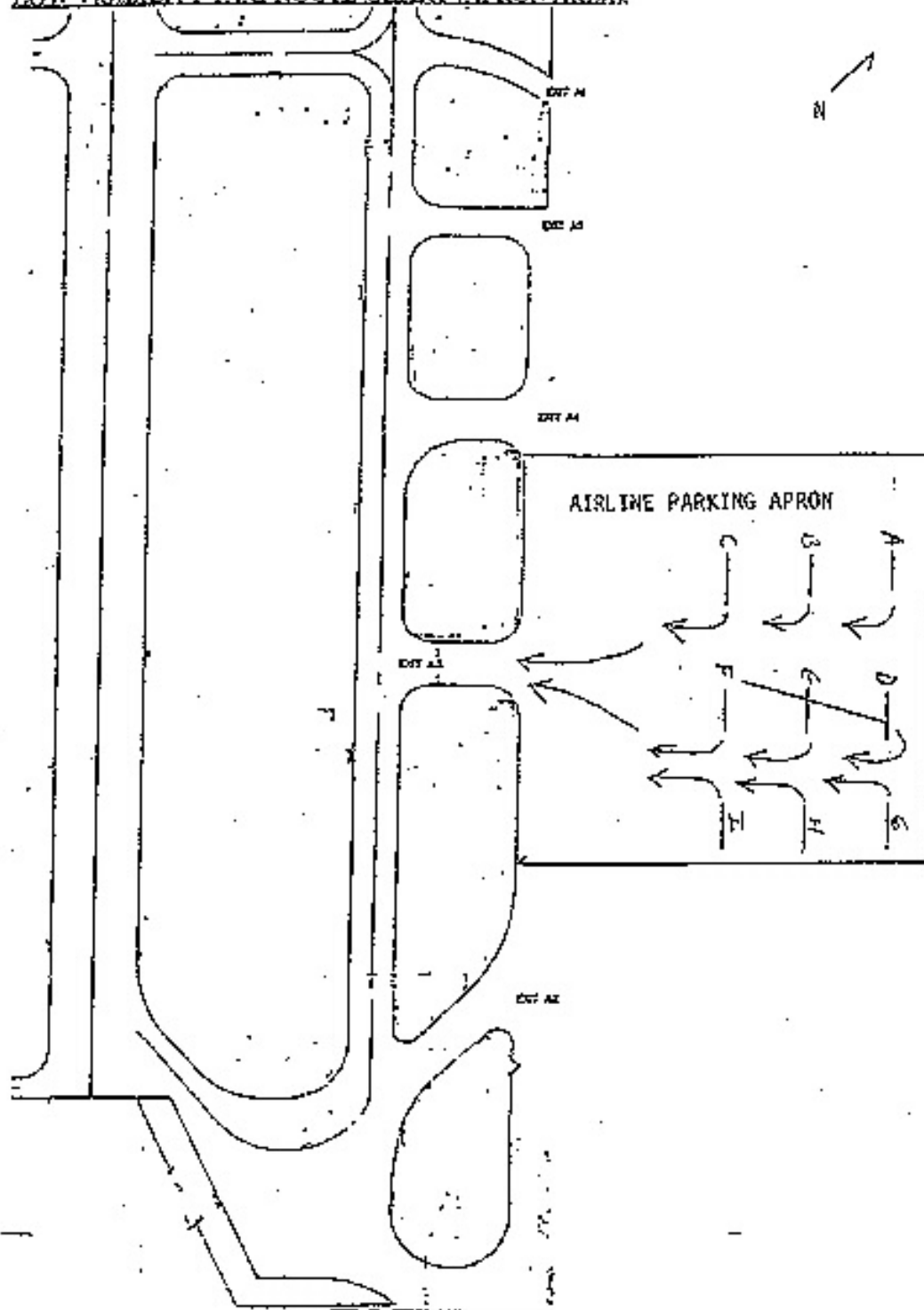
- (1) Upgrade runway 30R to Category II.
- (2) Install taxiway centerline lights on taxiways "A", "E", and "N."
- (3) Install runway guard and controllable stop bars.
- (4) Install Surface Movement Surveillance System (SMSS).

10. LOW VISIBILITY TAXI ROUTE CHART (ENTIRE ROUTE)

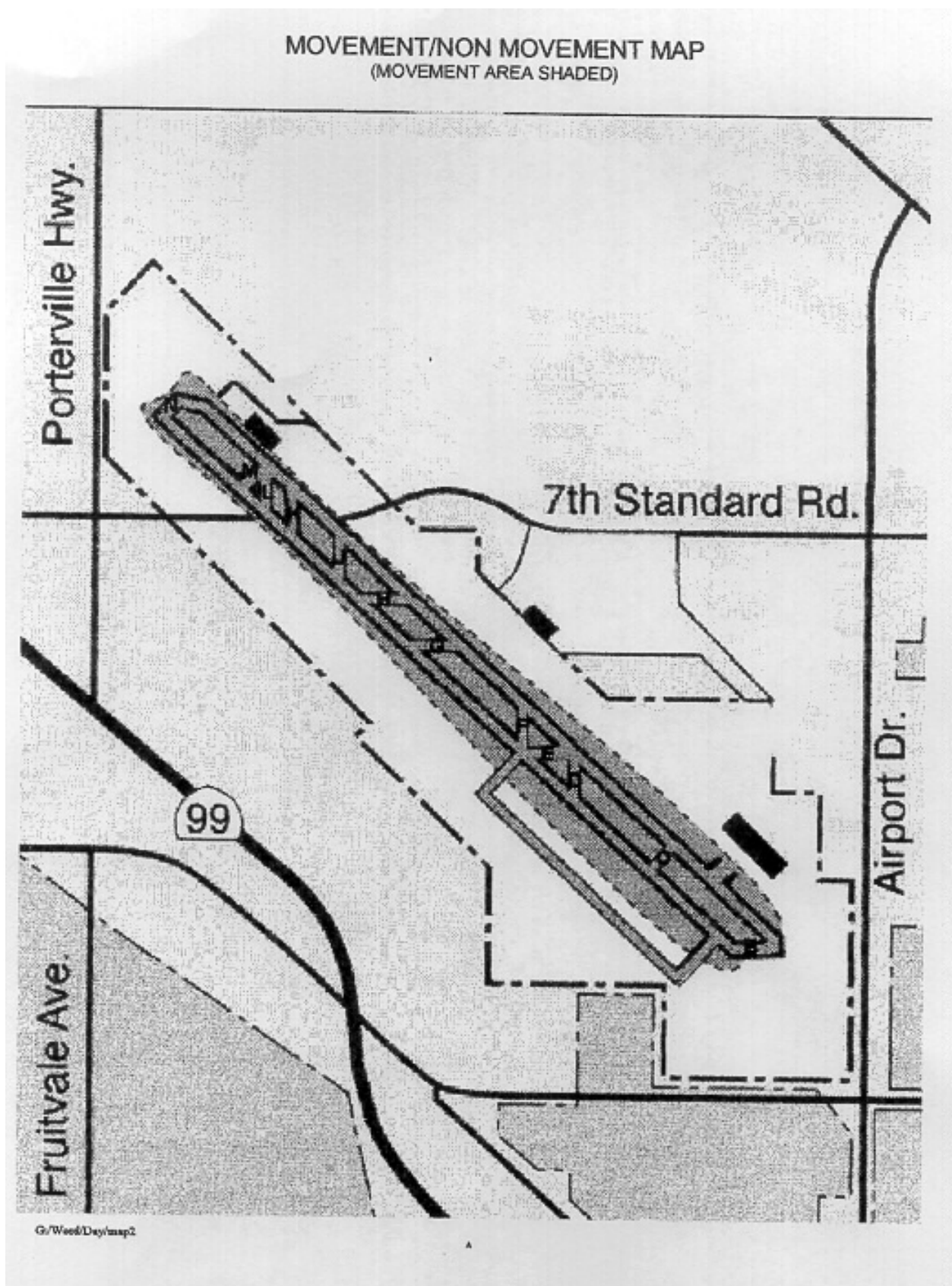


11. LOW VISIBILITY TAXI ROUTE CHART (APRON AREA).

11. LOW VISIBILITY TAXI ROUTE CHART (APRON AREA).



12. MOVEMENT/NON MOVEMENT MAP.





## **14. OPERATIONAL REQUIREMENTS**

### **14.1 Inspection**

(1). An initial inspection of the required lighting for SMGCS operations (Runway 30R centerline/touchdown zone lighting, taxiway edge lights installed on the low visibility routes and intersecting taxiways with the runway) must be conducted prior to the implementation of SMGCS procedures. This visual inspection is conducted to ensure that all required lighting is serviceable within the parameters set in paragraph 14.2 (below). This inspection should be repeated every 3-4 hours during SMGCS operations.

### **14.2 Maintenance Criteria for Lighting Aids**

- (1). Runway 30R Centerline/Touchdown Zone Lighting
  - (a.). No more than 10% of lighting in either system/configuration inoperative (no greater than 14 centerline lights out, no greater than 18 Touchdown Zone lights out).
- (2). Taxiways “A” through “N”, excluding “C” and “D”
  - (a). No two adjacent bulbs inoperative.
- (3). Mandatory Signs (Red signs at surface painted “Hold” bars) are required at all intersections with Runway 12L/30R (Taxiway “B” through “N”).
- (4). When any required equipment is inoperative, the following corrective action will be taken:
  - (a). Appropriate NOTAMS will be issued (and cancelled when repairs are completed).
  - (b). Traffic will be re-routed to areas where visual aids are working normally, or;
  - (c). Alternative procedures will be implemented to accommodate operations, or;
  - (d). Low visibility operations terminated until repairs are completed.